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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/131,693	08/10/1998	HOON-SOON CHOI	1317.1043/MO	8185

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EXAMINER	
CHIEU, PO LIN	
ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/131,693	Applicant(s) CHOI, HOON-SOON	
	Examiner Polin Chieu	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 15-17 of the amendments, filed 1/9/03, with respect to the rejection(s)of claim(s) under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 11, 14, and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al (5,875,164) in view of Seto et al (6,021,102), Chang et al (6,119,262), and Hogan (5,699,434).

Regarding claims 1-4, 11, 14, and 37-38, Yamakawa et al discloses a phase locked loop (PLL) to receive the pulse stream, to generate a PLL clock (col. 12, lines 30-64); a frame/ID synchronization detector to latch the pulse stream according to the PLL clock to generate a symbol clock (a frame/ID synchronization detector generating a symbol clock must be present in the PLL circuit since it is able to generate different types of clocks according to the recording medium detected); a single demodulator (79, fig. 29); a ECC decoder (79); and a CD audio processor (81). However, Yamakawa et al does not disclose EFM and EFM+ demodulation; a external memory; error correction

according to a predetermined code length and error correction range, wherein the values are different for DVD and CD modes; a descrambler; a syndrome generator; an erasure constant generator; a modified syndrome calculator; a modified Euclidean algorithm; and a Chien search and error correction circuit.

Yamakawa et al is able to receive a DVD or a CD and generate a video and/or audio signal, wherein a demodulation process is performed (79). However, Yamakawa et al does not disclose the specific methods of demodulation performed. Seto et al teaches demodulation of a CD using EFM and demodulation of a DVD using EFM+ (col. 7, lines 52-59). Further, it would have been obvious to have an external memory for storing the demodulated data for use during the ECC decoding.

Chang et al teaches a predetermined code length C1(32,28) and a error correction range C2(38,24) (col. 8, lines 55-67); a syndrome generator (20); a erasure constant generator to receive an erasure flag to generate an erasure constant (fig. 1b); a modified syndrome calculator to receive the syndrome polynomial and the erasure constant to calculate a modified syndrome and generate a Forney syndrome polynomial (col. 5, lines 5-10); a modified Euclidean algorithm to process the Forney syndrome polynomial and the erasure polynomial based on a modified Euclidean algorithm, to generate an errata locator polynomial and an errata evaluator polynomial (col. 5-6); and a Chien search and error correction circuit to correct errors of the demodulated data stored in the memory according to the errata locator polynomial and the errata evaluator polynomial (24).

Hogan teaches a descrambler to descramble data in the DVD mode (col. 8, lines 23-67).

It would have been highly desirable to demodulate using EFM for a CD mode and EFM+ in a DVD mode since they are the common techniques used for the respective mediums. It would have been highly desirable to have an external memory so that the ECC decoding and demodulator can use the memory for processing. Since Yamakawa et al does not disclose a specific method of error correction, it would have been highly desirable to use any known method of error correction. It would have been highly desirable to have a descrambler so that the device could descramble copy protected video.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have a demodulator performing EFM and EFM+; a ECC correcting according to a predetermined code length and error correction range using a syndrome generator, erasure constant generator, a modified syndrome calculator, a modified Euclidean algorithm; and a Chien search and error correction circuit; a memory; and a descrambler in the device of Yamakawa et al.

4. Claims 5-6, 13, and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al (5,875,164) in view of Seto et al (6,021,102), Chang et al (6,119,262), Hogan (5,699,434), and Jeong (5,988,872, note: Jeong appears to be commonly owned).

Regarding claims 5-6, 8, 13 and 39-40, Yamakawa et al does not disclose a second memory map for a CD mode; the plurality of blocks is 13; the first fixed number

of bytes is 32.25 Kbytes; the plurality of frames is 256; and the second fixed number of bytes is 32 bytes.

Jeong '872 teaches a memory map in fig. 4. A plurality of blocks and frames, and a first and second fixed number of bytes are not disclosed; however, these factors are dependent on the processing and the size of the memory. Further, the specifications have provided no predication why these specific numbers would be better than any other. Therefore, it would have been obvious to have the plurality of blocks at 13, the first fixed number of bytes at 32.25 bytes, the plurality of frames at 256, and the second fixed number of bytes at 32.

It would have been highly desirable to have a first and second memory map so that processing DVD data and CD data could be performed. For example, in the processing of video data (or DVD mode), it common to group data into 8x8 pixel blocks. However, audio data (or CD data) does not process into 8x8 pixel blocks because audio data does not have pixels. Therefore, it is clear that the groupings of audio and video would require different memory maps when a single memory is used.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have a first and second memory map in the device of Yamakawa et al.

5. Claims 7, 10, 12, 15, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Seto et al and Chang et al.

Regarding claims 7 and 10, Yamakawa et al discloses a PLL, a frame/ID, a single demodulator, and a ECC; Seto et al discloses demodulation for a DVD and

demodulation for a CD; and Chang et al discloses error correction using a predetermined code length and error correction range, a syndrome generator, an erasure constant generator, a modified syndrome calculator, a modified Euclidean algorithm, and a Chien search and error correction unit, as discussed previously. Please refer to the art rejection of claim 1 for a detailed discussion of the limitations.

Regarding claims 12 and 15, Yamakawa et al discloses a PLL, a frame/ID, a single demodulator, and a ECC; Seto et al discloses demodulation for a DVD and demodulation for a CD; and Chang et al discloses error correction using a predetermined code length and error correction range, as discussed previously. Please refer to the art rejection of claim 1 for a detailed discussion of the limitations.

The limitations of claim 43 were discussed in the art rejection of claim 7 and 10 (note: the demodulator is not a single demodulator). Please refer to the art rejection of claims 7 and 10.

6. Claims 8 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Seto et al, Chang et al, and Jeong.

Regarding claim 8, Jeong discloses memory maps as discussed in the art rejection of claims 5 and 6. Please refer to the art rejection of claims 5 and 6.

The limitations of claim 41 were discussed in the art rejection of claims 7 and 8. Please refer to the art rejection of claims 7 and 8.

7. Claims 9 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Seto et al, Chang et al, Jeong and Shim (5,970,208).

Regarding claims 9 and 42, Yamakawa et al does not disclose a VBR control margin.

Shim teaches a VBR control margin to interface the error corrected data with an A/V decoder (col. 5, lines 1-15).

It would have been highly desirable to have VBR control margin to control the flow of data.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have a VBR control margin in the device of Yamakawa et al.

8. Claim 13 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Seto et al, Chang et al and Jeong.

Regarding claim 13, Jeong discloses memory maps, as discussed previously. Please refer to the art rejection of claim 5 for a detailed discussion of the limitations.

The limitations of claim 44 were discussed in the art rejection of claims 12 and 13. Please refer to the art rejection of claims 12 and 13.

9. Claims 16, 20-21, 24-27, 30-33, 36, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al.

Regarding claims 16, 20, 24-25, 30-31, 36, and 45, Yamakawa et al discloses a controller determining a type of disk through a signal read from the disk and outputting discrimination information (col. 11, line 42 – col. 13, line 3); a single pre-processor generating a clock from a pulse stream read from one of the DVD and the CD and performing demodulation of the pulse stream according to the discrimination information and the generated clock (79, fig. 29); a single ECC decoder to error correct the first and

second demodulated data (79); and a data processor and converter processing the data (81). However, Yamakawa et al does not disclose a single external memory to store the first and second demodulated data in a corresponding format according the disk type.

External memories used during various processing steps, demodulation or ECC, are well known in the art. Further, it is well known in the art that memories are often controlled by a memory controller.

It would have been highly desirable to have an external memory with a memory controller to be used during processing steps such as demodulation or ECC decoding.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have an external memory with a memory controller in the device of Yamakawa et al.

Regarding claims 21, 27, and 33, Yamakawa et al discloses that the data processor and converter audio-converts or data-converts the processed data according to the discrimination information (82,83).

Regarding claim 26 and 32, Yamakawa et al discloses that the signal pre-processor generates a clock from a pulse stream read from the medium (col. 11, line 42 – col. 12, line 64).

10. Claims 17, 22-23, 28-29, 34-35, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Chang et al.

Regarding claims 17, 22-23, 28-29, 34-35, and 46, Chang et al discloses error correcting data according to discrimination information using a preset error correction method, specifically a predetermined code length and correction range that are different

for different mediums, as discussed previously. Please refer to the art rejection of claim 1.

11. Claims 18 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Hogan.

Regarding claims 18 and 47, Yamakawa et al discloses an audio processor; and Hogan discloses a descrambler, as discussed in the art rejection of claim 1. Please refer to the art rejection of claim 1.

12. Claims 19 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Seto et al.

Regarding claims 19 and 48, Yamakawa et al discloses a PLL and frame/ID; and Seto et al discloses demodulation in a DVD mode and demodulation in a CD mode, as discussed previously. Please refer to the art rejection of claim 1.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tajiri (6,072,757 and 6,072,758) discloses detecting a disc type using the diffraction from the disc (note: the filing dates of the patents is prior to the filing date of the present application, but after the foreign priority date). Doi, Yamakawa et al, and Maeda et al also disclose detecting a disc type.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Polin Chieu whose telephone number is (703) 308-6070. The examiner can normally be reached on M-F 8:30 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B. Christensen can be reached on (703) 308-9644. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

PC
March 21, 2003